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- A. The life of a freight car depended upon the type of load bauled and the roadbeds over which the cars moved. Cars were usually constructed of oak timbered frames and pine sides. There were very few steel cars. The overall average of wooden cars was about 20 years. The cars being used for hauling coal, ore, construction material and other heavy products, particularly in the Kuzbas and Donbas areas, had an average life of about 10 years.
- 2. Q. What was the average daily and yearly run (in kms and in hours) of a locomotive crew? What was the time out for repairs of various classes?
 - A. All personnel works an eight-hour day as a rule. A locomotive crew cannot exceed 12 hours a day. This limit is imposed as a safety factor. However, time spent in waiting for a train to be readied to move is only counted at half time. Therefore, a crew would be on duty for more than 12 hours if part of this time was "standby" time. A total of 192 hours is set for a normal work month. Therefore, a locomotive crew can work 192 (monthly hours) times 12 months, less two weeks (vacation) or a yearly total of 2208 hours. In the USSR there is a regulation that a locomotive can be operated only by two crews. This system, called "Sparemmyy", or "coupled" in English, was established to fix responsibility. Previously, crews were assigned haphazardly. Now, a locomotive crew is assigned to a run between Station A and Station B, a distance of 75 km. It takes five hours to make the run. After arriving at Station B a new or different locomotive is attached. The original locomotive and crew, with another train attached, returns to Station A, after checking, refueling and watering. This means that the locomotive and crew travels approximately 150 kms a day or 10 hours operating time as an average.

The annual run, in kms, can be figured as follows: Each month there is a three-

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day period during which the locomotive is laid up for inspection and miscellaneous small repairs. Taking into consideration also a period of capital maintenance which takes place every five years and which is approximately three months in duration, we can arrive at the following: Each year there is approximately one half month lost through capital maintenance, then adding the 36 days a year for the monthly inspection periods, we have a figure of 51 days operating time which is lost. The 51 days a year from 365 gives a total operating time of 314 days per year. At an average daily run of 150 kilometers, a total figure of 47,100 kms is arrived at for the yearly run of a locomotive.

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three months every five years for capital maintenance. Figuring each on the basis of 100% for maximum operating efficiency, one can arrive at the following? Since there is one half month lost each year due to capital maintenance and three days a month or 36 days a year for general inspection, this means that every year approximately 10% of the time was lost for the general three day inspection and five days for capital maintenance, or a total of 15%. Added to this is approximately 25% due to stand-by time which gives a total of 40% in which the locomotive is inoperative. Therefore, each locomotive is, roughly, operating but 60% of the time.

- 6. Q. From the time a locomotive reached the end of a run to the time it started on the return run, what was the average elapsed time?
 - A. One to three hours, depending on the amount of time taken for refueling, rewatering, and waiting for a new load to be made up.
- 7. Q. On the average, how long did it take from the time a crew was called to the time the train left on its run?
 - A. A crew was always on call for freight duty. However, in the case of passenger trains, a rigid schedule was maintained for the crew. From the time a crew was called to duty until the time the train left on its run was approximately one to one and one half hours (this includes an average of 30 minutes allowed for the crew to travel to the depot).
- 8. Q. On the average, how long did it take to refuel and water a locomotive during a run?
 - A. The major stations with good equipment could handle refueling and rewatering in approximately 10 to 15 minutes. Small stations where there was inefficient or old equipment, or where it was necessary to do the job manually, took anywhere from 30 to 45 minutes.

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25/1	there are certain long distance freight runs where
	one locomotive only is used. An example of this would be the case of a large shipment
	of a certain type of product loaded at one depot and consigned in whole to another
	depot a long distance away. In such cases two or possibly three crews are aboard
	the train. Short stops are made only for refueling and watering. An example of
	the type of load hauled in such cases would be coal, construction equipment, or during
	the peak harvest season, certain agricultural products. The stops made on such a run
	for refueling and watering are usually at the end of the average leg, or approximately
	75 to 100 kms.

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